

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application: He et al.)	Group Art Unit: 1796
)	
Serial No. 10/779,505)	Examiner: Jeffery C. Mullis
)	
Filed: February 13, 2004)	Atty. Docket No. 3075.NWN
)	

For: Elastic Attachment Adhesive Containing Radial Block Copolymer

BRIEF ON APPEAL

Commissioner for Patents
Alexandria, VA 22313-1450

Sir:

Appellants hereby appeal the decision of the Primary Examiner finally rejecting claims 1-4 and 6-12.

A copy of the claims involved in this appeal is set forth in the *Claims appendix*.

(i) Real party in interest

The real party in interest is Henkel AG & Co. KGaA.

(ii) Related appeals and interferences

The Board is directed to the appeals relating to copending commonly assigned application Serial Nos. 10/ 779,420 and 10/779,492, as listed in the *Related proceedings appendix*.

(iii) Status of Claims

Claims 1-4 and 6-12 are pending.

Claims 5, 13 and 14 have been canceled.

Claims 3 and 4 are rejected under 35 U.S.C. § 112, second paragraph.

Claims 1, 2 and 6-9 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over

Lechat et al. (US2005/0020773).

Claims 1-4 and 6-12 are rejected under 35 U.S.C. 102 (b) as being anticipated by Diehl et al. (US 5,292,819).

Claims 1-4 and 6-11 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kueppers (US 5,939,483).

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102 (b) as being anticipated by Asahara (US 5,532,319).

Claims 1-4 and 6-12 are provisionally rejected as being unpatentably obvious over claims 1-16 of copending application Serial No. 10/779,420.

The rejections of claims 1-4 and 6-12 are being appealed.

(iv) Status of Amendments

All amendments have been entered.

(v) Summary of claimed subject matter

Independent claim 1 is directed to a hot melt adhesive comprising, as required components, (i) a radial block copolymer component comprising $(\text{PS-PI-PB})_n\text{X}$ wherein PS is polystyrene, PI is polyisoprene and PB is polybutadiene, X is the residue of a multifunctional coupling agent used in the production of the radial block copolymer, and n is equal to or greater than 3 and represents the number of PS-PI-PB arms appended to X, said radial block copolymer having a styrene content of from 25 wt % to about 50 wt %, (ii) a linear triblock copolymer, and (iii) a tackifying resin. Based on the weight of the adhesive composition, the radial block copolymer component is present in amounts of from 15 wt % to about 35 wt %, the linear

polymer is present in amounts up to about 20 wt %, and the tackifying resin is present in amounts of from about 30 to about 70 wt %. The adhesive must be suitable for use as an elastic attachment adhesive. Page 1, line 23 to page 2, line 3.

Independent claim 10 is directed to an article of manufacture comprising a hot melt adhesive and a substrate. The substrate is an elastomeric fiber and the hot melt adhesive is one that comprises, as required components, (i) a radial block copolymer component comprising (PS-PI-PB)_nX wherein PS is polystyrene, PI is polyisoprene and PB is polybutadiene, X is the residue of a multifunctional coupling agent used in the production of the radial block copolymer, and n is equal to or greater than 3 and represents the number of PS-PI-PB arms appended to X, said radial block copolymer having a styrene content of from 25 wt % to about 50 wt %, (ii) a linear triblock copolymer, and (iii) a tackifying resin. Based on the weight of the adhesive composition, the radial block copolymer component is present in amounts of from 15 wt % to about 35 wt %, the linear polymer is present in amounts up to about 20 wt %, and the tackifying resin is present in amounts of from about 30 to about 70 wt %. Page 2, lines 4-10

(vi) Grounds of rejection to be reviewed on appeal

- A. WHETHER THE SUBJECT MATTER OF CLAIMS 3 AND 4 ARE INDEFINITE.
- B. WHETHER THE SUBJECT MATTER OF CLAIMS 1, 2 AND 6-9 IS UNPATENTABLY OBVIOUS OVER LECHAT ET AL.
- C. WHETHER THE SUBJECT MATTER OF CLAIMS 1-4 AND 6-12 IS ANTICIPATED BY DIEHL ET AL.
- D. WHETHER THE SUBJECT MATTER OF CLAIMS 1-4 AND 6-11 IS UNPATENTABLY OBVIOUS OVER KUEPPERS.
- D1. WHETHER THE SUBJECT MATTER OF CLAIMS 10 AND 11 IS UNPATENTABLY

OBVIOUS OVER KUEPPERS.

E. WHETHER THE SUBJECT MATTER OF CLAIMS 1-4 AND 6-9 IS ANTICIPATED BY ASAHARA ET AL.

F. WHETHER THE SUBJECT MATTER OF CLAIMS 1-4 AND 6-12 ARE PATENTABLY DISTINCT OVER THE SUBJECT MATTER OF CLAIMS 1-16 OF COPENDING APPLICATION SERIAL NO. 10/779,420.

(vii) *Argument*

A. Claims 3 and 4 clearly and distinct claim the subject matter appellants regard as the invention

Claims 3 and 4 are rejected under 35 U.S.C. § 112, second paragraph.

The examiner rejects claims 3 and 4 as being indefinite in reciting that the radial copolymer is part di-block (SIS). Appellants disagree and assert that the claim language would be readily understood by one of ordinary skill in this art. Again, as set forth in appellants' disclosure, and within the disclosure of the Lechat U.S. patent application (US 2005/0020773) cited and applied by the examiner, the recited diblock content is an indication of the coupling efficiency. The terminology used in appellants' claims would not be indefinite to one of ordinary skill in the art. Due to coupling inefficiency, such polymers are conventionally described as a polymer with a percentage description of diblock.

Reversal of the examiner's Section 112, second paragraph rejection is requested.

B. Claims 1, 2 and 6-9 are patentable over Lechat et al.

Claims 1, 2 and 6-9 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Lechat et al. (US2005/0020773).

The disclosure of Lechat would not render the invention obvious to one of ordinary skill

in the art.

Lechat is directed to radial block copolymer compositions. The rubbers are described by Lechat as useful in the manufacture of pressure sensitive adhesive compositions for labeling applications. The radial block copolymers of Lechat are prepared by controlling the coupling efficiency of the coupling reaction so that at least 40 wt % of the di-block material remains uncoupled. As disclosed in paragraphs [0068] to [0071] the rubbers used in the adhesives of Lechat comprise from 10-35 wt %, more preferably from about 15 to 22 wt %, of styrene, and a minimum of at least 40 wt %, most preferable 70 wt % of di-block content. Paragraph [0116] referred to by the examiner characterizes the polymer as containing 49.1 % di-block and having a styrene content of 16.6 wt %. A polymer of the type disclosed for use in appellants' claimed hot melt adhesive would not be obvious from the disclosure of Lechat.

Lechat fails to disclose a hot melt adhesive comprising a radial block copolymer (PS-PI-PB)_nX having a styrene content of from 25 wt % to about 50 wt %, a linear block copolymer, and a tackifying resin, and wherein, based on the weight of the adhesive composition, the radial block copolymer is present in amounts of from 15 wt % to about 35 wt %, the linear polymer is present in amounts up to about 20 wt %, the tackifying resin is present in amounts of from about 30 to about 70 wt %.

The Lechat rubber is described as being formulated into pressure sensitive adhesive compositions useful in labeling end uses. Such adhesives would not be suitable for use as an elastic attachment adhesive.

Appellants submit that the claimed subject matter is not obvious over Lechat et al.

Reversal of the examiner's rejection of the claims 1, 2 and 6-9 as being obvious over Lechat et al. is requested.

C. Claims 1-4 and 6-12 are patentable over Diehl et al.

Claims 1-4 and 6-12 are rejected under 35 U.S.C. 102 (b) as being anticipated by Diehl et al. (US 5,292,819). The examiner refers to Examples 1-4 and to Table 1 (col. 14).

Diehl does not anticipate appellants' claimed invention, which requires the presence of a linear block copolymer. In order to anticipate, a reference must disclose - either explicitly or inherently - all elements of the claim within the four corners of the document. As such, Diehl fails to anticipate the claimed invention.

Appellants submit that the claimed subject matter is not anticipated by Diehl et al.

Reversal of the examiner's rejection of the claims 1-4 and 6-12 as being anticipated by Diehl et al. is requested.

D. Claims 1-4 and 6-11 are patentable over Kueppers.

Claims 1-4 and 6-11 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kueppers (US 5,939,483).

While the examiner again acknowledges that no specific examples exist having all appellants combination of materials, the examiner urges that the disclosure of Kueppers lies within the broad ambit of the claims.

Appellants disagree. There is no disclosure which would motivate the skilled artisan to make the adhesive claimed by appellants. Moreover, the adhesive of Kueppers is described for use in packaging applications. See Table 1 (col. 10), in which the adhesive examples are

reported to have viscosities ranging from 1100 to 1470 cPs and 150°C. Such an adhesive would not be useful as an elastic attachment adhesive.

Appellants submit that the claimed subject matter is not obvious over Kueppers.

Reversal of the examiner's rejection of the claims 1-4 and 6-11 as being obvious over Kueppers is requested.

D1. Claims 10 and 11 are patentable over Kueppers.

The subject matter of independent claim 10, and claim 11 dependent thereon, are directed to articles comprising a substrate, which substrate comprises an elastomeric fiber. As noted above, Kueppers is silent as to any articles that would comprise an elastomeric fiber and fails to provide any disclosure that would indicated to the skilled artisan that the Kueppers' adhesives could be used in the manufacture of articles comprising an elastic substrate.

Appellants submit that the subject matter of claims 10 and 11 are not obvious over Kueppers.

Reversal of the examiner's rejection of the claims 10 and 11 as being obvious over Kueppers is requested.

E. Claims 1-4 and 6-9 are patentable over Asahara.

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102 (b) as being anticipated by Asahara (US 5,532,319).

Asahara discloses block copolymer compositions having specific combinations and types of block copolymers and pressure sensitive adhesive prepared using the block copolymer compositions of the invention as the base polymer component of the adhesive. The block

copolymer compositions are formulated for pressure sensitive applications and comprise 20-90 wt % of a $(S-B-I)_n-X$ and/or $(S-I-B)_n-X$ block copolymer where $n=2, 3$ or 4 and from 80-10 of a SBI or SIB diblock. While Asahara discloses compositions that contain $(S-B-I)_n-X$ wherein x is 2-4, there is no exemplification, or even a general disclosure of the use of any polymer composition comprising $(S-B-I)_3-X$ let alone in amounts of from 15 to 35 wt %. There is no disclosure of use of 15-35 wt % of $(S-B-I)_3-X$ with not more than about 20 wt % of a linear triblock as disclosed and claimed by appellants. A polymer of the type disclosed for use in appellants' claimed hot melt adhesive is not anticipated by the disclosure of Asahara.

Applicants submit that the claimed subject matter is not anticipated by Asahara.

Reversal of the examiner's rejection of the claims 1-4 and 6-9 as being anticipated by Asahara is requested.

F. Claims 1-4 and 6-12 are patentably distinct over the subject matter of claims 1-16 of copending application Serial No. 10/779,420.

Claims 1-4 and 6-12 are provisionally rejected as being unpatentable obviousness over claims 1-16 of copending application Serial No. 10/779,420. This is a nonstatutory obviousness-type double patenting rejection.

The examiner urges that the scope of the claims overlap.

The claims of application Serial No. 10/779,420 are directed to adhesive formulations containing a radial block copolymer $(PS-PI-PB)_nX$ in amounts of less than 15 wt %. In contrast, the claims of the subject application are directed to adhesive formulations containing a radial block copolymer $(PS-PI-PB)_nX$ in amounts of from 15 wt % to about 35 wt %.

In determining whether a nonstatutory basis exists for a double patenting rejection, the first question to be asked is: “Does any claim in the application define an invention that is merely an obvious variation of an invention claimed in the patent?” If the answer, as here, is no, then an obviousness double patent rejection is not appropriate.

The claims of the subject application do not overlap and are not obvious variations of the invention claimed in application Serial Nos. 10/779,420. Appellants submit that the claims of the subject application are not obvious variations of the invention claimed in application Serial Nos. 10/779,420 and that the obviousness type double patenting rejection is improper.

The Board is requested to reverse the examiner’s nonstatutory obviousness-type double patenting rejection.

Respectfully submitted,

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(viii) *Claims appendix*

1. A hot melt adhesive comprising

a radial block copolymer component comprising (PS-PI-PB)_nX wherein PS is polystyrene, PI is polyisoprene and PB is polybutadiene, X is the residue of a multifunctional coupling agent used in the production of the radial block copolymer, and n is equal to or greater than 3 and represents the number of PS-PI-PB arms appended to X, said radial block copolymer having a styrene content of from 25 wt % to about 50 wt %,

a linear triblock copolymer, and

a tackifying resin,

wherein, based on the weight of the adhesive composition, the radial block copolymer component is present in amounts of from 15 wt % to about 35 wt %, the linear polymer is present in amounts up to about 20 wt %, the tackifying resin is present in amounts of from about 30 to about 70 wt %,

said adhesive being suitable for use as an elastic attachment adhesive.

2. The adhesive of claim 1 in which the number average molecular weight of each arm of said radial block copolymer is from about 30,000 to about 95,000.

3. The adhesive of claim 2 wherein the radial block copolymer component has a SIB percentage of less than about 25 %, based on the amount of the radial block copolymer component.

4. The adhesive of claim 3 wherein the radial block copolymer component has a SIB percentage of less than about 20 %, based on the amount of the radial block copolymer component.
6. The adhesive of claim 1 wherein said linear block copolymer is styrene-isoprene-styrene, styrene-butadiene-styrene, styrene-isobutylene styrene, styrene-b-ethylene/butylene-b-styrene, and/or styrene-b-ethylene/propylene-b-styrene.
7. The adhesive of claim 1 wherein n between about 3 and about 6.
8. The adhesives of claim 1 further comprising a wax, said wax being present in an amount of less than about 5 wt %
9. The adhesive of claim 1 further comprising a liquid plasticizer, said plasticizer being present in amounts of less than about 20 wt %.
10. An article of manufacture comprising a hot melt adhesive and a substrate, wherein
said hot melt adhesive comprises
a radial block copolymer component comprising $(PS-PI-PB)_nX$ wherein PS is polystyrene, PI is polyisoprene and PB is polybutadiene, X is the residue of a multifunctional coupling agent used in the production of the radial block copolymer, and n is equal to or greater

than 3 and represents the number of PS-PI-PB arms appended to X, , said radial block copolymer having a styrene content of from 25 wt % to about 50 wt %,

a linear triblock copolymer, and

a tackifying resin,

wherein, based on the weight of the adhesive composition, the said radial block copolymer component is present in amounts of from 15 wt % to about 35 wt %, the linear polymer is present in amounts up to about 20 wt %, the tackifying resin is present in amounts of from about 30 to about 70 wt %, and

said substrate comprises an elastomeric fiber.

11. The article of claim 10 which is a disposable elastic article.

12. The article of claim 11 which is a diaper.

(ix) *Evidence appendix*

NONE

(x) Related proceedings appendix

- A. Serial No. 10/779, 420 (Attorney Docket No. 3073.NWN), filed February 13, 2004 in the names of Qiwei He and Michael G. Harwell. Assigned to Henkel AG & Co. KGaA.
- B. Serial No. 10/779,492 (Attorney Docket No. 3074.NWN), filed February 13, 2004 in the names of Qiwei He and Michael G. Harwell. Assigned to Henkel AG & Co. KGaA.